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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,963	01/26/2006	Rolf Theo Anton Apetz	DE030261	9402
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EXAMINER				
GOLIGHTLY, ERIC WAYNE				
ART UNIT		PAPER NUMBER		
1792				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/566,963

**Applicant(s)**

APETZ, ROLF THEO ANTON

**Examiner**

Eric Golightly

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-15 and 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-15 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's response with amendment filed on 8/27/2009 is acknowledged.

Claims 1-3, 5-15 and 33 are pending. Claims 4 and 16-32 are cancelled. Claim 33 is new.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "removing the product" in line 6 renders the claim indefinite because the claim does not positively recite forming a product, but instead only recites "providing" a reaction partner to react to form a product (lines 4 and 5). Thus, a product is not necessarily formed since the provided reaction partner may not be in contact with the contaminants or the conditions, e.g., pressure or temperature, may inhibit reaction.

The phrase "removing the product via a pump system connected to the vacuum chamber without dismantling of the optical device" in lines 6 and 7 renders the claim indefinite because it is not exactly clear whether the intended meaning is that the "removing" can be performed without the dismantling, or if the intended meaning is that the pump system can be "connected" without the dismantling, or if both meanings or

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some other meaning is intended. It appears that the intended meaning is that the "removing" can be performed without the dismantling, and this meaning will be used for purposes of examination.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-3 and 5-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/37309 to Partlo et al. (hereinafter "Partlo") in view of US 4,597,665 to Galbraith et al. (hereinafter "Galbraith").

Regarding claims 1 and 10, Partlo teaches a method of cleaning at least one surface of an optical device disposed in a vacuum chamber (abstract and page 6, lines 4-6), which device is at least partially contaminated by contaminants introduced by a radiation source (page 4, line 4-6), the method comprising the acts of: adjusting at least

on of a temperature prevailing on the at least one surface in the vacuum chamber (page 9, line 9) and a pressure in the vacuum chamber (page 13, lines 21-25); and providing at least one obstacle located at a second portion of the at least one surface (page 11, lines 7-16).

Partlo does not explicitly teach that that the contaminants hitting the at least one surface are removed from a first portion, that the obstacle collects the contaminants and that the at least one obstacle used includes at least one recess. Removal of the contaminants would have been obvious to one of ordinary skill in the art at the time of the invention since Partlo discloses increasing the surface heat (page 9, line 9) and using low pressures (page 13, lines 21-25), which are known to promote removal of contaminants, which contaminants are collected by the obstacle (Partlo at page 11, lines 9-13). It is noted that Partlo discloses contaminants resulting from ultraviolet and x-ray radiation (page 4, lines 4-6), which are also taught as the contaminants in the present application (specification at page 1, line 4).

Partlo does not teach that the at least one obstacle used includes at least one recess. Galbraith teaches flaw detector for optically transmissive surfaces and method of use (abstract) and discloses obstacle recesses such as cracks and holes in the surfaces (col. 1, lines 10-15 and 35-39 and claim 1). It would have been obvious to a person of ordinary skill in the art at the time of the invention to collect contaminants in the holes as per the Galbraith teaching in the method as per the Partlo teaching with a reasonable expectation of success since particles become trapped in holes.

Regarding claims 2 and 3, Partlo and Galbraith disclose the method wherein the temperature of the at least one surface is set around 200°C (Partlo at page 9, line 9).

Regarding claims 5, 6 and 12, Partlo and Galbraith disclose the method wherein the obstacle further includes at least one elevation with a cylindrical shape (Partlo at Fig. 7A). Further, the skilled artisan would find the distance between the elevation and recess an obvious design choice since a too close distance would not include coverage to surface areas outside the elevation/recess region, while a too far distance would not include coverage to surface area within the elevation/recess region.

Regarding claim 7, Partlo and Galbraith disclose the method wherein the elevation is arranged so as to run approximately or fully parallel with rays emitted from the radiation source along the at least one surface (Partlo at Figs. 7 and 7B).

Regarding claim 8, Partlo and Galbraith disclose the method wherein the elevation includes nickel and further material configured to promote formation of accumulations of the contaminants (Partlo at page 11, line 16).

Regarding claims 9 and 11, the recess of the Partlo/Galbraith teachings may be formed by a CVD or photochemical process or laser treatment, though the patentability of the present application does not depend on the method of producing the holes. See MPEP 2113.

Regarding claim 13, Partlo and Galbraith do not explicitly teach using a chemical process to remove contaminants. However, use of chemical processes to remove contaminants is known in the art and the skilled artisan would find it obvious to include use of a chemical process to remove contaminants with a reasonable expectation of

success. It is noted that use of a chemical process to remove contaminants is not disclosed as critical in the present application.

Regarding claims 14 and 15, Partlo and Galbraith disclose the method wherein the surface is provided with a coating, but do explicitly teach the thickness of the coating. However, the skilled artisan would have found it obvious to minimize the thickness of the coating, including to below 0.5 nm, in order to conserve the coating material.

7. Claims 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Partlo (WO 01/37309) in view of Galbraith (US 4,597,665) and in further view of US 6,44,037 to Frankel et al. (hereinafter "Frankel").

Partlo and Galbraith do not explicitly teach removing the contaminants from the obstacle by providing a reaction partner to react with the contaminants and removing a reaction product via a pump. Frankel teaches a method of using a processing chamber (abstract) and discloses: providing a reaction partner to react with contaminants to form a product (col. 9, lines 28-31); and removing the product via a pump system (col. 9, lines 31 and 32). It would have been obvious for one of ordinary skill in the art at the time of the invention to include the step of providing a reaction partner to react with contaminants to form a product and removing the product via a pump system as per the method of the Frankel teaching in the method as per the Partlo/Galbraith teachings, thereby removing contaminants from the obstacle, wherein the pump system used is

connected to the vacuum chamber and without dismantling the optical device, in order to reuse the obstacle on a subsequent obstacle device cleaning.

***Response to Amendment***

8. In view of the amendments, the rejection of claims 16-18 and 20-32 under 35 USC § 103(a) are withdrawn.

***Response to Arguments***

9. Applicant's arguments filed 8/27/2009 have been fully considered but they are not persuasive.

Regarding applicant's argument that the applied art does not teach or suggest collecting contaminants at an obstacle that includes a recess (remarks at page 9, paragraph beginning "There is simply no teaching"), applicant is invited to read to prior Office action at page 3. last paragraph to page 4, second paragraph.

Applicant's argument that the skilled artisan would not have been motivated, without the benefit of applicant's disclosure, to include the step of collecting contaminants at an obstacle that includes a recess as per the method of the Galbraith (US 4,597,665) teaching in the method as per the Partlo (WO 01/37309) method since, it is alleged, Partlo already discloses the use of a debris collector (remarks at page 9, paragraph beginning "Without using the present application"), is unpersuasive. Assuming arguendo, that applicant is correct about the Partlo disclosure of the use of a



debris collector, this disclosure clearly indicates that collecting debris is a desirable result which provides motivation for, not against, further debris collection.

In response to applicant's apparent argument that there is no suggestion to combine the references since, it is alleged, the Galbraith disclosure has nothing to do with using a recess to collect contaminants (remarks at page 9, paragraph beginning "Without using the present application"), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Galbraith discloses detecting the presence of particles, or contaminants, and holes, or recesses (col. 1, lines 10-12), and it is within the general knowledge of the skilled artisan that particles become trapped in holes. This detecting the contaminants disclosure at least suggests combining with the collection of the contaminants as per the method of the Partlo teaching.

10. As noted in the Advisory Action mailed on 6/12/2008, Applicant is reminded that it is highly advisable to add headings to the specification.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Golightly whose telephone number is (571) 270-3715. The examiner can normally be reached on Monday to Thursday, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571) 272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EWG

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 1792